CIRM Shared Research Laboratory Information Form – Part Two

Section A. Project Information

Project Title	CIRM Shared Research Laboratories, Part 2

Limited to 300 Characters

Project Start Date	Aug 1, 2007	Construction Start Date	Oct 22, 2007	Occupancy Date	Mar 15, 2008

Total Part Two Funds Requested for Shared Laboratory Space	$2,466,726
Total Part Two Funds Requested for Stem Cell Techniques Course	$ 000
Total Capital Funds Requested	$1,466,726

Note: All green fields are calculated values. Do not enter a value in the field.

Please indicate whether you propose to apply for funding of a Stem Cell Techniques Course along with the Shared Laboratory Space, or just the Shared Laboratory Space.

(●) Shared Research Laboratory only ( ) Shared Research Laboratory and Stem Cell Techniques Course

NOTE: Please be aware that any information you provide in this form will be made publically available.

Section A. 1. Program Director

Name	Prefix: Dr.	First: Owen	Middle: N.	Last: Witte	Suffix:

Email (office)	owenw@microbio.ucla.edu	This email address identifies you to CIRM. Please use this email address for all correspondence with CIRM.
Application Number	CL1-00505-1	This field should fill automatically, based on the email address. If not, enter the number you received via email from CIRM, in the form "XX9-99999-9", where "X" is a letter, and "9" is a digit.

Section A. 2. Facilities Contact

Name	Prefix: Mr.	First: John	Middle:	Last: Foerster	Suffix:

Institution	University of California, Los Angeles	If your institution is not listed, please identify the name of the institution here.
Other Institution	n/a	
Position Title	Program Manager	
Department	Facilities Design and Project Management Department	
Address	BOX 951526, 731 Young Drive South, 3rd Floor	

City	Los Angeles			CA	Zip Code 90095-1526
Phone Number	(310) 825-5182	Ext		Fax Number	(310) 206-9522

Email (office)	foerster@facnet.ucla.edu	This email address identifies you to CIRM. Please use this email address for all correspondence with CIRM.

(Revised 03/07/2007)

Section A. 3. Public Abstract

See Appendix A.

Section A. 4. Statement of Benefit to California

See Appendix A.

CIRM Shared Research Laboratory Information Form – Part Two

Section B. Laboratory Renovation Plan

Project Manager	John Foerster		Construction Supervisor	John Foerster
Title	Program Manager		Title	Program Manager
Company/Institution	UCLA/Facilities Design and Project Mana		Company/Institution	UCLA/Facilities Design and Project M

Describe plans for development/renovation of the shared laboratory space including fixed equipment costs. Include a description of the current space and how it will be renovated and reconfigured to form the laboratory. Include as attachments one 11x17 page of the current floor plan space and one 11x17 page of proposed floor plan of the renovated space. Describe all renovations that will be done. Describe how the project will be managed and tracked, as well as how change orders will be handled. For laboratories that are proposed to be located in leased space, provide information regarding the institution's long-term access to the leased space. Describe plans and schedule for all phases of development including design, construction, and installation of equipment leading to a functional laboratory. Give a proposed contingency plan in case of cost overruns. Any additional costs due to budget overruns will be the responsibility of the grant recipient. (narrative limited to 3 pages)

As described in Part I, the UCLA Institute for Stem Cell Biology and Medicine (ISCBM proposes to develop ~4700 ASF of space to establish a human embryonic stem cell (hESC) Shared Research Laboratory (SRL). The hESC SRL will be located in the Factor Building, a centrally located, on-campus site that is a five minute or less walk from faculty laboratories in the Schools of Medicine and Engineering and the College of Letters and Science. A distinguishing feature of the proposed SRL is that, in addition to multi-user laboratory space, it will include FDA compliant hESC Good Tissue Practice (GTP) and Good Manufacturing Practice (GMP) suites. Thus, the SRL will build upon UCLA's strong track record of bench to bedside research by providing space that will allow basic and pre-clinical research, the development of clinical protocols, and the ultimate manipulation of hESC and their derivatives for clinical use.

As shown in the attached floor plan (Figure 1), most of the ~4700 ASF is currently occupied by either research laboratories or offices. The current occupants will vacate these areas by summer 2007. The general renovation plan will establish the SRL shown in Figure 2 as follows:

• ~1974 ASF of this laboratory/office space (outlined in yellow) will be renovated and configured as multi-user laboratory space. These facilities are designed for basic and pre-clinical hESC research and can be reserved by UCLA and non-UCLA hESC investigators. This area will also include an hESC Analytic Core Laboratory in which specialized equipment for analysis of hESC and their derivatives will be installed.
• An additional ~1659 ASF of space (outlined in blue) will be configured as a GTP suite in which clinical development of hESC protocols can be conducted.
• Finally, UCLAs GMP suite is already located on the 14th floor of the Factor Building adjacent to the above areas (outlined in red). Areas within the GMP core will be dedicated to the derivation of new hESC lines and the manipulation of clinical grade hESC and hESC derivatives.

A significant advantage of our SRL plan is that the 14th floor is already configured into areas in which these distinct stem cell functions can be sequestered, thereby obviating the need for major construction. As a result, UCLA-ISCBM and our proposed grant renovation funds will be used (1) to upgrade ventilation, (2) to install emergency power, and (3) for general refurbishment. CIRM funds will also be used for (4) fixed equipment that will include an upgraded security system, centralized CO2, revamping the cold room, and phone/computer systems.

(1) Ventilation: Basic research and manufacturing of clinical grade products requires an environment that is constructed and used in a manner to minimize the introduction, generation and retention of air borne particles. In order to meet the worldwide standard, International Organization for Standardization (ISO) 14644-1, significant upgrades to the ventilation system will be made. This work will include a thorough cleaning of supply and exhaust ductwork and installation of new supply and exhaust filters, Magnahelic differential pressure gauges, and an Isensix wireless monitoring system to monitor equipment temperature and pressurization between laboratories and corridors. In order to ensure the efficacy of the ventilation system, particulate air sampling will be conducted on a biannual basis to ensure that test articles produced and manipulated in the laboratory will not become contaminated due to the environment.

(2) Emergency Power: In order to ensure the continued viability of blastocysts, oocytes, hESCs, and other materials in the event of electrical outages, emergency power sources for incubators, freezers and other critical equipment will be installed. This protection is dependent on the installation of one, double electrical outlets in each of 11 rooms. This critical equipment will also

Section B -- 1. Laboratory Renovation Plan (continued)

be connected to the Direct Digital Control System (DDC), a master server that monitors various critical campus environmental control systems, including equipment temperature. The DDC system is monitored 24 hours, 7 days a week by the UCLA facilities department.

(3) General Laboratory Renovation: a number of minor upgrades are needed in order to modernize the space, meet the requirements of the Americans with Disabilities Act (ADA), and comply with state and local safety codes. These include the following:

• Casework: The existing casework is outdated and will be replaced with both built-in and moveable cabinets in 10 rooms. This upgrade will in turn maximize storage utilization, space efficient equipment placement, and on-going cleaning of the facilities.
• Foot-Pedal Sinks will be installed in all laboratories to prevent contamination of materials and allow maximum user flexibility
• Windowed Walls separating six pairs of laboratories will be installed in order to permit monitoring of activities by the laboratory managers
• Windowed Entry Doors will be installed for three labs to allow for external observation (other laboratories have windowed doors)
• Door Relocation in 14-666E to enable hall access
• Entrance Reconfiguration to the GTP suite to ensure security and provide entry through a gowning and locker room
• Windowed Emergency Exit Door to be installed between the GTP and GMP suites to ensure maintenance of restricted access to specific areas and creating a release mechanism for fire alarm emergencies
• Relocation of the Emergency Exit Door to allow access from the GTP laboratory to a dedicated autoclave
• Safety & ADA modifications for GTP and SRL restrooms
• Painting and Cleaning of all relevant offices and laboratories
• Epoxy Floors to be installed in the GTP laboratories to meet FDA standards
• Tiled Floors to be refurbished/replaced in multi-user laboratories as necessary
• Capping of all unnecessary or unused ducts
• Application of Special Film and Removal of all Blinds to all externally exposed windows to facilitate maintenance of dust free environments and meet FDA GTP standards

(4) Fixed Equipment: Fixed equipment costs in this category will include the following:

• Restore and Upgrade existing Cold Room in 14-937 for storage of temperature sensitive cell media and for experiments requiring below ambient air temperature
• Install Central CO2 and Liquid Nitrogen Tank Room (14-943) with piping to GTP laboratories to free valuable laboratory space for equipment and cabinets; central delivery of tanks will also maintain individual laboratory security by minimizing access
• Install Phone and Fax lines in GTP office, 14-939
• Installation of Computer Cabling: up to three pairs of ports for 11 laboratories and up to four pairs for three offices for intra and internet communication and camera monitoring of individual laboratories
• Install Security System: Security and monitoring of laboratory users requires installation of a video surveillance system with software, hardware, computer, and related costs. Locknetic card-reader locks for the secure GTP suite will monitor entry for compliance tracking, training, and to address laboratory incidents.

Project Manager: All aspects of this project will be managed by John Foerster, UCLA Facilities Design and Project Management Department. Mr. Foerster has a civil engineering degree from the University of New Hampshire with 6 years experience in managing similar renovation projects including healthcare, OSHPD, and laboratories at UCLA. Mr. Foerster will supervise all campus construction, provide quality assurance for all related projects, and will be responsible for environmental compliance, overall project management, liaison with consultants, architects, engineers and inspectors, as well as supervision of building codes and coordinating Fire Marshal activities.

Renovation Plan and Schedule:

Preliminary Design Phase – (4/1/07 to 5/15/07)
• Meetings with users and designers, coordinated and managed through the UCLA Facilities Design and Project Management Department, to determine space use and code requirements.
• Study and compare utility requirements and upgrades with existing utility capabilities including but not limited to ventilation/

Section B -- 1. Laboratory Renovation Plan (continued)

exhaust, security, life safety, standard power and emergency power
• Perform existing utility surveys and obtain/study space construction as-built.
• Space plan area to use as much of the existing space as possible to help reduce construction costs.
• Discuss level of finishes and interior design plan impacting both existing and new work with the interior designer.

Approval of Preliminary Plans (5/15/07 to 5/31/07)
• Obtain users final approval prior to proceeding with the full set of construction documents.
• Obtain State Fire Marshal preliminary review and comments prior to proceeding with the final set of construction documents.

Prepare Working Drawings – (6/1/07 to 8/1/07)
• Prepare full set of construction documents and specifications for the required approvals, permits and public bid.
• Finalize interior design and selection of finishes to be included in the bid documents.
• Prepare laboratory equipment list with specifications for budget and bid purposes.
• Update preliminary budget during working drawing phase and provide value engineering input to help reduce construction costs.
• Detailed review and coordination of construction documents and existing site conditions to help reduce or eliminate the need for unforeseen change orders during the construction phase.

Approval of Working Drawings – (8/2/07 to 8/31/07)
• Submit construction documents for review and approval with the State Fire Marshal, the Division of State Architects (DSA) for ADA compliance and the UCLA Capital Programs for Architecture and Engineering (A & E) review. Provide any corrections required to the plans to submit for and obtain final permit approval and approval to proceed with construction.

Public Bid, Award Construction Contract and Construction – (9/3/07 to 2/15/08)
• Publicly bid the project and award to lowest responsible bidder in accordance with the standard UC bidding and award procedures.
• Monitor, manage and coordinate the construction progress and schedule using UCLA Facilities Management Design and Project Management Department on a daily basis to help maintain the schedule and budget.
• Coordinate delivery and installation of the new lab equipment, purchased directly by the University with the contractor awarded area build out.

Beneficial Occupancy - (2/16/08 to 2/29/08)
• Work with the contractor, State Fire Marshal, Inspector of Record and the Building Official that all the testing and inspections have been satisfactorily met so that the University can now move into, occupy and utilize the space as planned.

Notice of Completion – (3/1/08 to 3/15/08)
• Verify contractor of record has completed all contractual and punch list work so that the Notice of Completion may be filed with the county.

Contingency Plans and Cost Overruns: The project supervisor has dedicated 9% of the total facilities renovation budget to providing contingency plans. Any remaining construction overages will be borne by ICSBM.

Change Orders:
The University of California adopted procedures for projects of this scope that delegate change order authority to the facility project manager (J. Foerster) after verification by the campus Accounting Office and agreement by the contractor to facilitate construction projects: http://www.ucop.edu/facil/fmc/facilman/volume5/pt2ch3.html#part2).

Section B. 1. Schedule/Timeline and Drawdown of Funds Table

Provide a realistic schedule and drawdown of funds for completing each activity/milestone, as indicated below.

#	Activity/Milestone	Start Date	Completion or Milestone Date	Amount of CIRM funds to be drawn
1	Grant Award (estimate)		Aug 1, 2007	
2	Request for Planning Funds (10% of Construction Costs)		Aug 1, 2007	$100,000
3	Prepare Preliminary Plans	Apr 1, 2007	May 15, 2007	
4	Approval of PPs		May 31, 2007	
5	Prepare Working Drawings	Jun 1, 2007	Aug 1, 2007	
6	Approval of WDs		Aug 31, 2007	
7	Request Construction Contract funds (80% of Construction Costs)		Aug 15, 2007	$800,000
8	Advertise for Construction Contract	Sep 3, 2007	Sep 24, 2007	
9	Award Construction Contract		Oct 15, 2007	
10	Construction Activities	Oct 22, 2007	Feb 15, 2008	
11	Completion of Equipment Purchases		Nov 5, 2007	
12	Request Equipment Purchase funds		Nov 5, 2007	1,000,000
13	Beneficial Occupancy		Feb 29, 2008	
14	Notice of Completion		Mar 15, 2008	
15	Request Construction Completion Amount (10% of Construction Funding)		Mar 15, 2008	$100,000

"Preliminary Plans" (PPs) represent approximately 35 percent of the design effort, or may be considered the product of completing the "Design Development" (DDs) phase of architectural work.

"Working Drawings" (WDs) represent drawings and specifications from which a contractor may determine the full extent of work contemplated in the project for purposes of submitting a bid; may be referred to as completion of "Construction Documents" (CDs) phase of architectural work.

Section B. 2. Budget

Provide a complete budget for the renovation that includes construction costs, design fees, administration of the project, other costs (i.e. installation of equipment) and a construction contingency (limited to 7-10% of the construction budget). Identify the amount of CIRM funds requested and the matching funds (construction requires 20% matching funds). Provide a complete budget for movable equipment (equipment requires 20% matching funds). (narrative limited to 3 pages)

(Note: An Excel spreadsheet can be attached as long as the total submission for this Section is limited to 3 pages)

The attached budget includes construction contract costs and other institutional construction costs. For example, "Utility Points of Connection": $12,000 budget line item represents the final utility connections that must be performed by the UCLA forces and not outside contractors. The above list also includes UCLA locksmith services under "Doors/Frames/Hardware" budget line item. Fire Alarm shut downs which require the services of the UCLA Fire Alarm Shop are included in the "Fire & Life Safety Upgrades" line item.

Renovations Matching Funds: The UCLA matching fund includes the $321,726 construction costs over the CIRM maximum funded $1M award as well as the construction costs incurred since 1/1/05, outlined in Section B4.

B2. MOVABLE EQUIPMENT:

I. Shared, Multi-User Laboratories and hESC Analytic Core

Four shared laboratory rooms will be established, allowing up to eight different laboratories to conduct hESC research at any given time, and equipped with biological safety cabinets, centrifuges, incubators, and an inverted phase microscope.

1 Sorvall Centrifuge, rotors, and buckets: $ 8,030
Thermo Stericycle Incubators: $ 9,970
2 Baker Class II Biological Safety Cabinet: $ 17,704
1 Zeiss Axiovert40 Inverted Phase Microscope (TS100): $14,584
Subtotal: $50,288 x 4 rooms = $201,152

The hESC analytic core will include instrumentation, described in detail in Part I, that will allow the molecular, genetic, and phenotypic analysis of hESC and their derivatives. The laboratory will include the following equipment:

1 Becton-Dickinson LSR II FACS machine: $180,000
1 Biorad Real time PCR Machine: $ 38,396
1 Amaxa Nucleofector II: $ 41,890
1 Zeiss Axioimager D1 Microscope: $ 48,859
1 Robosep cell separator: $ 40,000
1 Automated Karyotype System: $ 40,000
1 –80o C freezer $ 8,000
1 Shandon Cytocenrifuge $ 8,319
1 Water purification system: $ 9,000
Subotal: $414,464

II. GTP Suite

Four rooms in the GTP suite will be equipped for tissue culture and experimental manipulation of hESC and will require equipment similar to that described for the shared laboratories. This area will also distribute GTP-certified hESC lines, and the liquid nitrogen tanks are for their storage.

1 Sorvall Centrifuge, rotors, & buckets: $ 8,030
Thermo Stericycle Incubators $ 9,970
2 Baker Class II Biological Safety Cabinet: $17,704
1 Zeiss Axiovert40 Inverted Phase Microscope (TS100): $14,584
$50,288 x 4 rooms = $201,152
2 Fisher liquid nitrogen tanks (5500 vials/each): $11,902
2 –80o C freezers $16,000

Section B. 2. Budget (continued)

Subtotal: $229,054

Total for shared laboratories, GTP suite, and analytic core: $844,670

Miscellaneous equipment
Per CIRM instructions, only individual items costing more than $5,000 were itemized. However, additional equipment, purchased in replicate, will be needed and include ice machines ($4,184), refrigerators ($15,000), -20o C freezers ($15,000), binocular microscopes ($25,000), water baths ($7,500), automated pipetters ($10,000), Eppendorf micropipetters ($15,000), table-top centrifuges ($16,000), balances ($5,000), and electrophoresis equipment, including power packs and gel apparatus ($22,159). In addition, computers, linked to an intranet site, as well as the Internet, will be installed in each area of the SRL ($20,487). This total of $155,330 is likely to be insufficient to purchase all necessary accessories and UCLA matching funds will be allocated to do so.

Grand Total: shared laboratories ($201,152), hESC analytic core ($414,464), hESC GTP suite ($229,054), and miscellaneous equipment ($155,330) = $1,000,000.

Movable Equipment Matching Funds: UCLA will supply funds for additional equipment and furniture necessary to complete each laboratory and related office. UCLA has spent ~$320,000 (31.9% matching funds) for equipment previously purchased for the hESC GMP Core and Derivation Laboratories, GTP, and RB2 laboratories and costs are expected to surpass that amount.

Section B. 3. Budget Summary Table

Complete the budget summary for the use of CIRM funds.
Note: All colored fields contain calculated data. Please do not enter anything in those fields.

Other Project Costs				
Budget Category		**Total Budget**	**CIRM Grant Funds**	**Institutional Match**
Construction Contract Costs		$1,192,987	$ 838,390	$ 209,597
Other Construction Costs (institutional)		$ 25,000	$ 000	$ 25,000
Subtotal Construction		$1,217,987	$ 838,390	$ 234,597
Design Fees		$ 80,000	$ 60,000	$ 20,000
Administrative Costs		$ 35,400	$ 28,400	$ 7,000
Construction Contingency		$ 133,339	$ 73,210	$ 60,129
Total Construction		$1,466,726	$1,000,000	$ 321,726
Movable Equipment		$1,000,000	$1,000,000	$ 000
Total Budget		$2,466,726	$2,000,000	$ 321,726
Gross Square Feet	6872	$ 213.44	$ 145.52	Const Costs/GSF
Assignable Square Feet	4646	$ 315.70	$ 215.24	Const Costs/ASF

Section B. 4. Institutional Commitment

Provide a detailed description of the amount and source of matching funding for each request that requires matching funds. The requirement of matching funds can be satisfied if the institution can document funds, excluding other grant funds, committed to similar projects (i.e., renovation of lab space and equipment purchase) after January 1, 2005. Detail the use of the space after the three year period is completed. (narrative limited to 2 pages)

In March 2005, UCLA launched the ISCBM, providing $20 million over five years to create 12 new tenure track hESC faculty positions, provide staff support, and renovate and equip hESC laboratories. The creation of the ISCBM and the allocation of space for the SRL are evidence of the campus commitment to hESC research and the belief that hESC research holds great promise for the treatment of disease. The CIRM-ISCBM SRL will serve as the hub of our translational hESC research program now and in the future. As demonstrated throughout this application and outlined below, the UCLA Institutional commitment to the success of hESC research and the SRL project far exceeds and more than doubles the 20% or $400,000 match required by the RFA.

Renovation Matching Funds: UCLA's commitment to hESC research and the SRL project includes creation of the Core hESC Bank and Derivation Laboratories within the GMP suite, as well as shared resource facilities in RB2. Additionally, our commitment to the SRL project includes pre-award expenditures for preliminary design and approval of plans as well as preparation of working drawings and funds for contingency planning on this project.

Equipment Matching Funds: UCLA, through the ISCBM, expended funds to establish the hESC Core Bank and Derivation Laboratory within the GMP suite (Figure 1). This facility will be incorporated into the SRL and will be used for the eventual manipulation of clinical grade hESC and their derivatives. In addition, UCLA has purchased equipment for hESC work that will be housed in shared hESC space in Replacement Building (RB) 2 where several ISCBM faculty members have laboratories (Figure 2). The following expenditures have been made since January 1, 2005 or will be made in support of these activities:

hESC Core Laboratory:
- Nucleofector: $13,415
- 4 Microscopes: $104,732
  a. Fluoresence
  b. Inverted
  c. Computer upright fluorescence
  d. Computer inverted fluorescence
- Laminar flow & Still air hoods, BioSafety cabinet, Centrifuge, Microfuge, Water bath, Vortex mixer, Analytical balance, Double-door CO2 incubator, Double-door -80c freezer, Autofilling liquid nitrogen tank, Standard refrigerator: $81,402

TOTAL: $199,549.00

hESC Derivation Laboratory
- Isensix Monitoring System: $2,534.00
- Workstation, Centrifuge, Incubator, Refrigerator, CO2, & Misc: $24,414
- Micromanipulator: $77,437
- Microscope: $15,086

TOTAL: $119,471.00

GRAND TOTAL: $319,020

Total Equipment Expenditures: $319,020 (31.9% Matching Equipment Funds).

Summary of Project Commitment: The following costs detailed below have been or will be incurred since January 1, 2005 to create and support the SRL:

1. $321,726: Construction costs, including pre-award preliminary plan design and approval and preparation of working drawings & fixed equipment construction costs for the proposal outlined above
2. $33,221: expended in the creation of the GMP hESC Core Laboratory
4. $14,943: expended in the creation of the GMP hESC Derivation Laboratory
5. $27,179: expended in the creation of shared resource facilities in RB2 including a lentiviral and FACS analysis rooms.
6. $14,291: SRL Autoclave

Section B. 4. Institutional Commitment (continued)

7. $5,705: Renovation to related hESC laboratories
TOTAL: $417,065

Sub-Total Renovation: $417,065
Sub-Total Equipment: $319,020
GRAND TOTAL: $736,085 (Initial Institutional Project Commitment)

Future Use of Space: UCLA will continue to support the SRL in order to provide a valuable resource for cutting edge hESC studies over the next decade and beyond, even after CIRM SRL funds have been expended. The continued use of the SRL includes a financial commitment to physically maintain and upgrade the facility as well as replace or acquire new equipment to meet the evolving needs of hESC research. In particular, we believe that the basic and pre-clinical research supported by the SRL will eventually yield clinical applications. Thus, we envision a time in the not too distant future when expansion of the GTP and GMP areas within the SRL will occur in order to meet clinical needs.

Section C. Stem Cell Techniques Course (if applicable)

Based on the information provided in Part One of the application describing the course, include a justification of the additional space required and additional equipment requested, if any. Include additional square footage and provide as an attachment one 11x17 page of the proposed floor plan of the renovated space. (narrative limited to 1 page)

Limit narrative to visible field area.

Section C. 1. Schedule and Drawdown of Funds Table (if applicable)

Provide a realistic schedule and drawdown of funds for completing each activity/milestone, as indicated below.

#	Activity/Milestone	Start Date	Completion or Milestone Date	Amount of CIRM funds to be drawn
1	Grant Award (estimate)			
2	Request for Planning Funds (10% of Construction Costs)			$ 000
3	Prepare Preliminary Plans			
4	Approval of PPs			
5	Prepare Working Drawings			
6	Approval of WDs			
7	Request Construction Contract funds (80% of Construction Costs)			$ 000
8	Advertise for Construction Contract			
9	Award Construction Contract			
10	Construction Activities			
11	Completion of Additional Equipment Purchases			
12	Request Additional Equipment Purchase funds			$ 000
13	Beneficial Occupancy			
14	Notice of Completion			
15	Request Construction Completion Amount (10% of Construction Funding)			$ 000

"Preliminary Plans" (PPs) represent approximately 35 percent of the design effort, or may be considered the product of completing the "Design Development" (DDs) phase of architectural work.

"Working Drawings" (WDs) represent drawings and specifications from whicha contractor may determine the full extent of work contemplated in the project for purposes of submitting a bid; may be referred to as completion of "Construction Documents" (CDs) phase of architectural work.

"Additional Equipment" represents equipment to be used for the Stem Cell Techniques Course.

Section C. 2. Budget (if applicable)

Provide a complete budget for the additional renovation that includes construction costs, design fees, administration of the project, other costs (i.e. installation of equipment) and a construction contingency (limited to 7-10% of the construction budget). Identify the amount of CIRM funds requested and the matching funds (construction requires 20% matching funds). Provide a complete budget for additional movable equipment (equipment requires 20% matching funds). (narrative limited to 3 pages)

(Note: An Excel spreadsheet can be attached as long as the total submission for this Section is limited to 3 pages)

Section C. 3. Budget Summary Table (if applicable)

Complete the budget summary for the use of CIRM funds.
Note: All colored fields contain calculated data. Please do not enter anything in those fields.

Other Project Costs				
Budget Category		**Total Budget**	**CIRM Grant Funds**	**Institutional Match**
Construction Contract Costs		$ 000	$ 000	$ 000
Other Construction Costs (institutional)				
Subtotal Construction		$ 000	$ 000	$ 000
Design Fees				
Administrative Costs				
Construction Contingency				
Total Construction		$ 000	$ 000	$ 000
Additional Movable Equipment		$ 000	$ 000	$ 000
Total Budget		$ 000	$ 000	$ 000
Gross Square Feet		$ 0.00	$ 0.00	Const Costs/GSF
Assignable Square Feet		$ 0.00	$ 0.00	Const Costs/ASF

Section D. Signature Page

Complete, save, and print Part Two of the Shared Research Laboratory Grant Information.

Submit electronic application as an email attachment to laboratory@cirm.ca.gov no later than 5:00pm PST on March 16, 2007.

Mail* the original executed Part Two application and five (5) copies to:

Shared Research Laboratory Grant Application
California Institute for Regenerative Medicine
210 King Street
San Francisco, CA 94107

***Mailing must be postmarked no later than March 16, 2007.**
Applications will not be accepted after these deadlines.

Project Start Date	Aug 1, 2007	Construction Start Date	Oct 22, 2007	Occupancy Date	Mar 15, 2008

Total Part Two Funds Requested for Shared Laboratory Space	$2,466,726
Total Part Two Funds Requested for Stem Cell Techniques Course	$ 000
Total Capital Funds Requested	$1,466,726

Facilities Contact

Mr. John Foerster
Program Manager
Facilities Design and Project Management Department
n/a
BOX 951526, 731 Young Drive South, 3rd Floor
Los Angeles, CA 900951526
(310) 825-5182
foerster@facnet.ucla.edu

Authorized Organizational Official	Date
Print Name	Title
Program Director	Date
Print Name	Title

(Revised 03/07/2007)

CIRM Shared Research Laboratory Information Form – Part Two Supplement

Project Information

Application Number: CL1-00505-1

Program Director Name:

Historical Performance

Provide information on past performance for 3 projects.

	Project 1	Project 2	Project 3
Brief Project Title	Warren Hall	School of Dentistry	Young Hall Laser Labs
Original Budget (Total project cost)	$2,100,000	$1,052,000	$1,091,000
Final project cost	$2,450,000	$1,215,000	$1,040,750
Scheduled Completion Date	10/05	9/03	6/03
Actual Notice of Completion Date	11/05	10/03	6/03
Gross Square Feet involved	7,000	6,250	3,300
Assignable Square Feet involved	6,000	5,700	2,900
Approximate number of change orders	7	4	0
Value of all change orders & claims	$ 450,000	$ 163,000	$- 50,250
Type of construction management	In-house Forces	In-house Forces	In-house Forces

Laboratory Alteration Projects

Please enter the number of laboratory alteration projects completed by the applicant in the past 2 years (in the range of $1-5 million in project cost), and the approximate total dollar value that these projects represent.

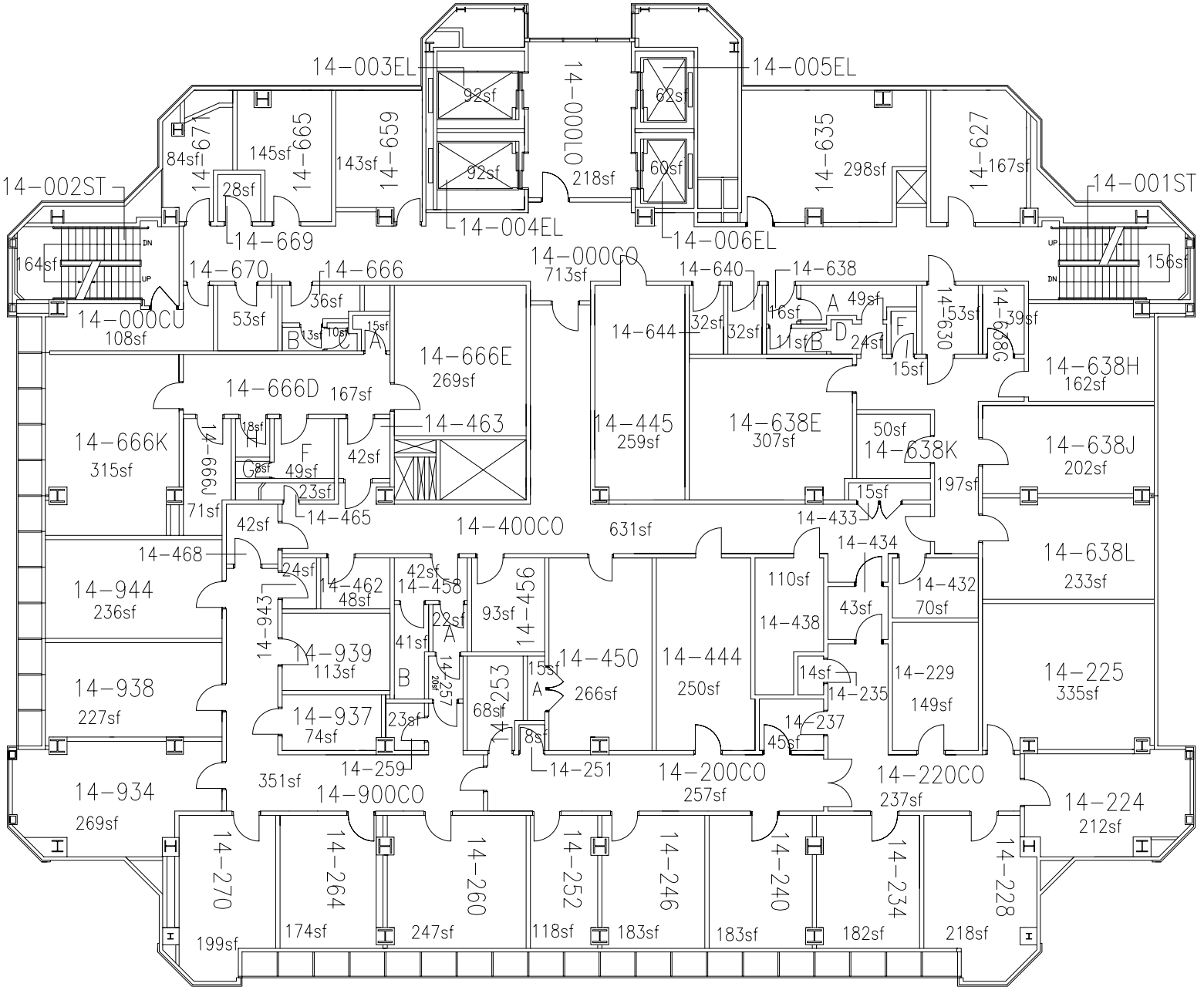
Total Laboratory Alteration Projects: 6

Approximate Total Value: $8,500,000

Limit Budget Justification to visible field area.

UCLA/ISCBM-CIRM SRL Laboratory Part 2/Impacted Area 4646 Square Feet

TRADE/DESCRIPTION	COST PER SF	% COST	TOTAL BUDGET
1. Ventilation			
HVAC	$23.72	7.51%	$110,190
2. Electrical			
Electrical	$30.13	9.55%	$140,000
3. Lab Renovations			
Demolition	$5.64	1.79%	$26,200
Concrete/Cores/X-Rays	$1.18	0.37%	$5,500
Masonry/Fire Caulking	$1.61	0.51%	$7,500
Millwork/Cabinetry	$22.38	7.09%	$104,000
Thermal & Moisture Protection	$3.23	1.02%	$15,000
Doors/Frames/Hardware	$3.87	1.23%	$18,000
Lab Security Keying	$2.84	0.90%	$13,200
Drywall/Carpentry	$16.79	5.32%	$78,000
Floor & Base	$6.05	1.92%	$28,125
Painting/Wall Finishes	$8.18	2.59%	$38,000
Acoustical Ceilings	$2.69	0.85%	$12,500
Interior/Code Required Signage	$0.97	0.31%	$4,500
Fire Extinguishers	$0.32	0.10%	$1,500
Window Treatments	$1.72	0.55%	$8,000
ADA Upgrades	$6.46	2.05%	$30,000
Patch/Repair Adjacent Areas	$5.38	1.70%	$25,000
Utility Points Of Connections	$2.58	0.82%	$12,000
Plumbing/Sprinkler	$18.94	6.00%	$88,000
Fire & Life Safety Upgrades	$7.53	2.39%	$35,000
Fire Alarm & Sprinkler Shop Drawings	$0.97	0.31%	$4,500
4. Fixed Equipment			
Cold Room Refurbishment	$3.87	1.23%	$18,000
Tank Distribution Room	$8.61	2.73%	$40,000
Video Security System	$7.53	2.39%	$35,000
Data & Phone Cabling	$11.84	3.75%	$55,000
Contractor General Conditions	$20.51	6.50%	$95,272
Duct Cleaning	$19.37	6.14%	$90,000
Emergency Electrical (1 per lab x 11 labs)	$11.84	3.75%	$55,000
5. Install Lab Equipment	$5.38	1.70%	$25,000
Sub Total Construction Costs	**$262.16**	**83.04%**	**$1,217,987**
Design Fees			
Architectural	$6.46	2.05%	$30,000
Structural Engineering	$1.61	0.51%	$7,500
Mechanical Engineering	$3.23	1.02%	$15,000
Electrical Engineering	$4.30	1.36%	$20,000
Interior Design Fees	$1.61	0.51%	$7,500
Sub Total Design Fees	**$17.22**	**5.45%**	**$80,000**
Administrative Costs			
Plan Review & Permits	$0.75	0.24%	$3,500
Testing & Inspections	$2.15	0.68%	$10,000
Project Management/Admin Support	$4.30	1.36%	$20,000
Advertisement for Bids/Bid Services	$0.24	0.07%	$1,100
Builders Risk Insurance	$0.17	0.05%	$800
Sub Total Administrative Costs	**$7.62**	**2.41%**	**$35,400**
Contingency	$28.70	9.09%	$133,339
Total Preliminary Budget	**$315.70**	**100.00%**	**$1,466,725**

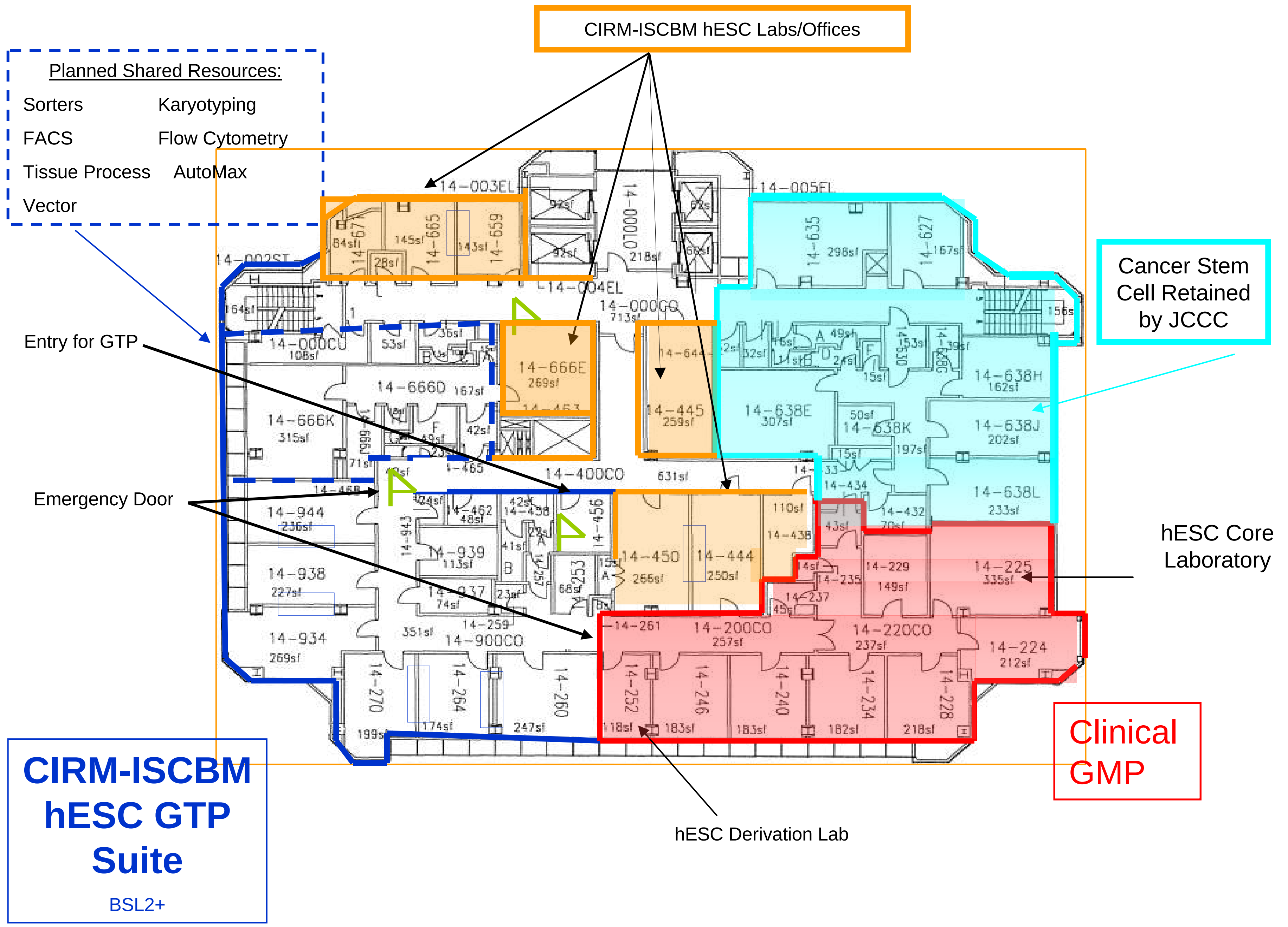


LOUIS FACTOR HEALTH SCIENCES BUILDING

UNIVERSITY OF CALIFORNIA LOS ANGELES

14TH FLOOR

0 2 4 8 16


CIRM-ISCBM hESC Labs/Offices
Planned Shared Resources:
Sorters
Karyotyping
FACS
Flow Cytometry
Tissue Process
AutoMax
Vector
Entry for GTP
Emergency Door
Cancer Stem Cell Retained by JCCC
hESC Core Laboratory
Clinical GMP
hESC Derivation Lab
CIRM-ISCBM hESC GTP Suite
BSL2+

1/26/07

Figures for Section B & B4 (CIRM Shared Research Laboratory Part 2 Application: (CL1-00505-1)
Institute for Stem Cell Biology & Medicine
University of California, Los Angeles

Section B: Laboratory Renovation Plan

Figure 1: Space to be developed

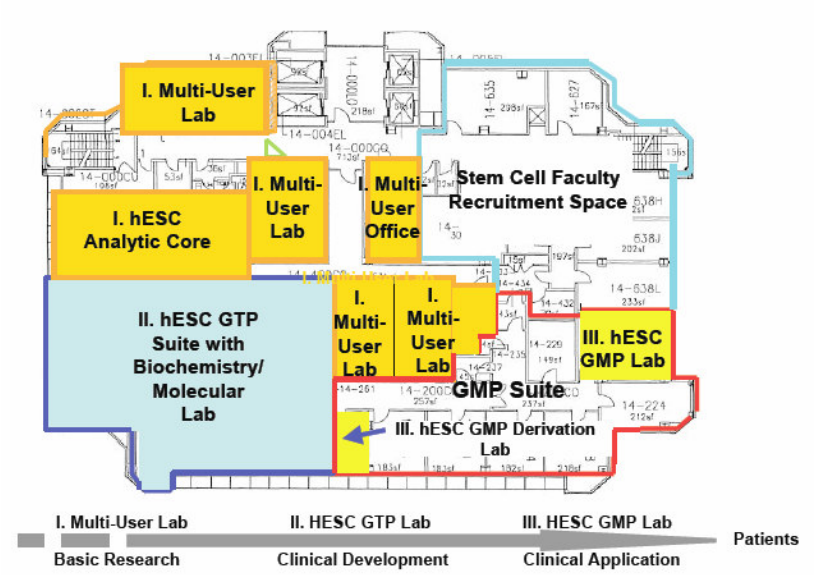


Figure 1. The 14th floor of the Factor Building (circled in Figure 1). The CIRM SRL will allow researchers to conduct basic hESC research and the resources to translate their findings to patients. The three integrated laboratory components include: **I.** 4 multi-user laboratories and an associated hESC analytic laboratory, accessible by UCLA and non-UCLA faculty, for general hESC research (orange); **II.** a hESC GTP laboratory (Blue) will be established for development of clinical/translational protocols; and **III.** GMP laboratory space will be used for derivation/manipulation of hESC for ultimate patient use. Additional space on the floor will be used as laboratory space for stem cell faculty recruitment.

Section B.4: Institutional Commitment

Figure 2: Aerial View of Laboratory Location

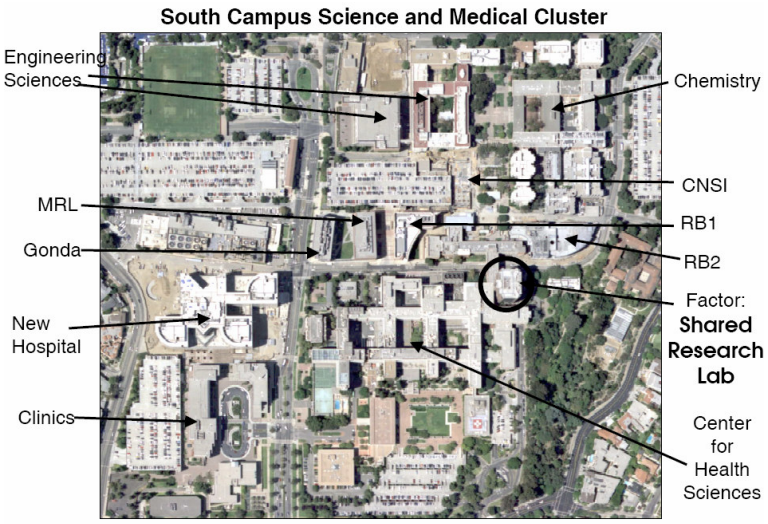


Figure 2. Aerial view of UCLA south campus science and medical cluster. California Nanosystems Institute (CNSI); Gonda Human Genetics; MacDonald Research Laboratories (MRL); Clinics, Outpatient Clinics;, Replacement Buildings I and II (RB I and II); The Factor building/SRL is circled.

CALIFORNIA INSTITUTE FOR REGENERATIVE MEDICINE

Appendix A

Application: CL1-00505-1

Title: CIRM Shared Research Laboratories

Public Abstract:

Our plan is to establish a ~4700 sq. ft. shared research laboratory dedicated to the experimental manipulation and ultimate clinical application of human embryonic stem cells (hESC). This Shared Research Laboratory (SRL) is centrally located on the main campus. The SRL will be used by researchers focused on understanding how hESCs are induced to generate specialized tissues used for regeneration of the blood forming, nervous, and musculoskeletal systems. The SRL will be a state of the art facility accommodating a hierarchy of functions that includes:

~1659ASF of general hESC, multi-user laboratory space will be assigned on a time share basis to investigators who do not have the capacity, or cannot due to federal restrictions, conduct research with hESC in their own research laboratory. In addition to cell culture facilities that will allow multiple groups to work simultaneously, space in this area includes an hESC analytic laboratory for the basic characterization of hESC and their derivatives.

~2245ASF of space will be used to establish a hESC GTP suite in which hESC free of infectious agents can be experimentally manipulated in a manner commensurate with their future clinical use. In addition to equipment necessary for the growth and genetic manipulation of hESC under GTP conditions, this facility will be able to distribute GTP maintained hESC lines to investigators.

Adjacent to the hESC GTP suite is the GMP laboratory suite including a hESC GMP derivation laboratory and bank. These facilities will allow hESCs to be derived and their progeny manipulated under conditions that meet federal guidelines for patient use. We have a strong track record of applying basic research findings to patients, and the adjacent location of multi-user, GTP, and GMP laboratories is an important factor that will allow basic hESC research findings to be developed and used to treat various human diseases.

The space for the SRL is part of our commitment to hESC research that includes 12 new stem cell faculty positions and matching funds for laboratory development. A committee comprised of faculty with extensive experience in the growth and manipulation of hESC is currently planning the development of the Shared Research Laboratory, and once it is established, they will provide regulatory oversight and supervise three staff responsible for the quality control of all equipment, ordering supplies, and scheduling access. The CIRM Shared Research Laboratory will be a state of the art facility in which intra- and extra-mural investigators can conduct hESC research not allowed due to federal restrictions or not technically feasible in their own laboratories.

Statement of Benefit to California:

The establishment of a hESC Shared Research Laboratory will make it possible for UCLA and non-UCLA investigators to conduct hESC research that is either not allowed due to current federal restrictions or not technically feasible in their own laboratories. As a result, investigators who would otherwise not be able to conduct hESC research will be able to become active in this area. This increase in the number of hESC scientists will in turn lead to new insights that will further increase the prominence of California as a leader in hESC research. A second benefit of the shared research laboratory is that the number of researchers trained to work with hESC will be increased, and this will ensure the availability of a skilled workforce available to fill jobs in the private biotechnology and pharmaceutical industry. These individuals will be a valuable resource for companies already located in California and will be an important incentive for others to relocate here. The plan to establish a Shared Research Laboratory designed to facilitate the translation of basic science to patients is a third benefit to the State. As described in the application, separate laboratory areas have been dedicated to the maintenance and manipulation of clinical grade hESCs, and this in turn will decrease time and costs of translating basic science discoveries to the clinic. This “bench to bedside” philosophy is consistent with our established track record of applying basic research to treat diseases. Thus, in addition to the direct benefit to patients and their families, the use of hESC to treat chronic diseases could reduce health care costs.